

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A process for reducing the amount of residual diphenylmethane diisocyanate monomer in a polyurethane prepolymer reaction product comprising the steps of:

(A) dissolving diphenylmethane diisocyanate monomer in one or more first inert solvents, said solvent or solvents being selected from the group consisting of solvents having a boiling point about 1°C to about 100°C below the boiling point of the diphenylmethane diisocyanate monomer at a pressure of 10 torr, wherein the weight ratio of the inert solvent or solvents to the diphenylmethane diisocyanate monomer ranges from about 75:25 to about 35:65;

(B) adding at least one polyol to a stoichiometric excess of the dissolved diphenylmethane diisocyanate monomer at an NCO:OH ratio in the range of from about 2:1 to 20:1;

(C) reacting said polyol(s) with said dissolved diphenylmethane diisocyanate monomer to form a mixture comprising polyurethane prepolymer reaction product and unreacted diphenylmethane diisocyanate; and

(D) distilling the mixture comprising polyurethane prepolymer reaction product and unreacted diphenylmethane diisocyanate in a second inert solvent having a boiling point about 1°C to about 100°C below the boiling point of the diphenylmethane diisocyanate monomer at a pressure of 10 torr to strip the unreacted diphenylmethane diisocyanate to a level less than 0.3% by weight based on the combined weight of prepolymer, residual monomer, and residual inert solvent,

wherein the inert solvent or solvents comprise about 5% to about 85% by weight of the total weight of the combination of the mixture for forming the prepolymer reaction product plus solvents ~~and where all solvent(s) employed in step (D) have a boiling point about 1°C to about~~

~~100°C below the boiling point of the diphenylmethane diisocyanate monomer at a pressure of 10 torr.~~

2. (Previously Presented) The process of claim 1 wherein the monomeric diphenylmethane diisocyanate is at least one isomer of diphenylmethane diisocyanate.

3. (Currently Amended) The process of claim 2 wherein the first inert solvent is selected from the group consisting of organic aromatic, aliphatic esters, and mixtures thereof having boiling points in the range of from about 115°C to about 214°C at 10 torr.

4. (Previously Presented) The process of claim 2 wherein the distillation step comprises at least three agitated film vacuum distillation stages in series, each at an evaporative temperature of up to about 150°C.

5-6 (Canceled).

7. (Previously Presented) The process of claim 1, wherein the prepolymer contains less than 0.1% by weight of unreacted diphenylmethane diisocyanate monomer based on the combined weight of prepolymer, residual monomer, and residual inert solvent.

8. (Previously Presented) The process of claim 1, wherein the prepolymer contains less than 0.05% by weight of unreacted diphenylmethane diisocyanate monomer based on the combined weight of prepolymer, residual monomer, and residual inert solvent after stripping and containing at least about 80% of the theoretical NCO content for a pure ABA structure.

9. (Previously Presented) The process of claim 1, wherein at least one polyol is selected from the group consisting of a polyester of adipic acid; a polyether of ethylene oxide, propylene oxide, or tetrahydrofuran; a polycaprolactone; a polycarbonate; a hydrocarbon polyol; and mixtures thereof; said polyol having a molecular weight in the range of from about 400 to about 5000.

10. (Previously Presented) The process of claim 1, wherein the polyol comprises at least one component having a low molecular weight in the range of from about 62 to about 400, and selected from the group consisting of ethylene glycol, isomers of propylene glycol, isomers of butane diol, hexanediol, trimethylolpropane, pentaerythritol, poly(tetramethylene ether) glycol, diethylene glycol, triethylene glycol, dipropylene glycol, tripropylene glycol, and mixtures thereof.

11. (Previously Presented) The process of claim 10 further comprising at least one polyol having a high molecular weight in the range of from about 400 to about 5000.

12. (Previously Presented) The process of claim 11 wherein the molar ratio of the low molecular weight polyol to the high molecular polyol is in the range of from about 0.25 to about 2.5:1.

13-28. (Canceled)

29. (Currently Amended) The process of claim 1 wherein the first inert solvent or solvents are selected from the group consisting of dimethyl phthalate, diethyl phthalate, diisobutyl adipate, and dibutyl phthalate.

30-31. (Canceled)

32. (Previously Presented) The process of claim 1 further comprising the step of adding at least one blocking agent selected from the group consisting of a ketoxime, a phenol, a lactam, or a pyrazole to the stripped prepolymer.

33. (New) The process of claim 1 wherein the second inert solvent or solvents are selected from the group consisting of dimethyl phthalate, diethyl phthalate, diisobutyl adipate, and dibutyl phthalate.